WHAT IS CLAIMED IS:

1. A stent for holding open a blood vessel comprising:

a first loop containing section, the first loop containing section arranged generally in the circumferential direction, the loops in said first loop containing section occurring at a first frequency;

a second loop containing section, the second loop containing section arranged generally in the circumferential direction, the loops in said second loop containing section also occurring at said first frequency; and

a third loop containing section the third loop containing section, the loops in said third loop containing section occurring at a second frequency that is higher than said first frequency, disposed in the generally circumferential space between said first and second loop containing sections and alternately joined to said first and second loop containing sections.

2. A stent according to claim 1, wherein the first loop and second loop containing sections are relatively adapted to enable radial support and the third loop containing section is relatively adapted to enable longitudinal flexibility.

3. A stent according to claim 1, wherein the first loop and second containing sections have wider struts than the third loop containing section.

4. A stent according to claim 1, wherein the first and second loop containing sections have two loops for every three loops of said third loop containing section.

5. A stent according to claim 4, wherein the relative widths of said struts is such that when said stent is crimped for insertion into a lumen of a blood vessel, said third loop containing section is crimpable to essentially the same diameter as said first loop and second containing sections.

6. A stent according to any of claims 1, wherein the higher frequency elements provide improved flexibility.

7. A stent according to claim 6, wherein, while flexing, the higher frequency elements have lower maximal strain of the expanded stent within a blood vessel caused by a pulsing of blood.

8. A stent according to claim 7, wherein, the maximal strain of the expanded stent within a blood vessel caused by a pulsing of blood is below the strain which would cause non-elastic deformation for the material of the stent.

9. A stent according to claim 8, wherein, said stent is made of stainless steel and said maximal strain is below approximately 0.5%.

10. A stent according to any of claim 9, wherein the first and second loop containing sections are 180 degrees out of phase with each other.

11. A stent according to any of claim 10, wherein the first and second loop containing sections are joined to said third loop containing sections such as to form a plurality of cells, each of which include two loops of one of said first or second loop containing sections and three loops of said third loop containing section.

12. A stent according to claim 1, wherein the stent is made of stainless steel.

13. A stent according to claims 1, wherein substantially each cell (500) in the stent encompasses the same area.

14. A stent according to claims 1, wherein the cell is arranged so that when expanded a length of the cell along a circumference of the stent is longer than a length of a cell along the longitudinal axis of the stent.

15. A stent according to claims 1, wherein the stent is made from NiTi.

16. A stent according to claim 12, wherein a cell of the stent is symmetrical about a line parallel to a longitudinal axis of the stent.

17. A stent for widening a vessel in the human body comprising:

a plurality of first circumferential bands containing a pattern of loops at a first frequency;

a plurality of second circumferential bands containing a pattern of loops at a second frequency higher than said first frequency, alternating with said first circumferential bands and periodically coupled thereto to form cells.

18. A stent according to claim 17 wherein the first circumferential bands containing a pattern of loops are comprised of

even first circumferential bands containing a pattern of loops; and

odd first circumferential bands containing a pattern of loops which are 180° out of phase with the loops of the even first circumferential bands, an odd first circumferential band occurring between every two even first circumferential bands.

19. A stent according to claim 18, wherein each cell includes two loops of one of said plurality of first circumferential bands and three loops of one of said plurality of second circumferential bands.

20. A stent according to claim 18, wherein each cell includes a number of loops of said first circumferential band corresponding to two cycles of said first frequency and a number of

loops of said second circumferential band corresponding to three cycles of said second frequency.

21. A stent according to claim 18, wherein the first circumferential bands have loops that are wider than the loops in said second circumferential bands.

22. A stent according to claim 21, wherein the relative widths of said loops is such that when said stent is crimped for insertion into a lumen of a blood vessel, the loops of said second circumferential bands are crimpable to essentially the same diameter as the loops of said first circumferential bands

23. A stent according to claim 21, wherein the higher frequency of the loops in said second circumferential bands provide improved flexibility.

24. A stent according to claim 23, wherein, while flexing, elements in the higher frequency loops have lower maximal strain.

25. A stent according to claim 24, wherein, the maximal strain of the expanded strain within a blood vessel caused by a pulsing of blood is below the maximum strain without non-elastic deformation for the material of the stent.

26. A stent according to claim 25, wherein, said stent is made of stainless steel and said lower maximal strain is below approximately 0.5%.

27. A stent according to claim 18, wherein the first circumferential bands have loops forming two cycles per period.

28. A stent according to claim 18, wherein the second circumferential bands have loops forming three cycles per period.

29. An expandable stent comprising a plurality of enclosed flexible spaces, each of the plurality of enclosed flexible spaces including:

a) a first member having a first end and a second end ;

b) a second member having a first end and a second end;

c) a third member having a first end and a second end;

d) a fourth member having a first end and a second end; the first end of the first member communicating with the first end of the second member, the second end of the second member communicating with the second end of the third member, and the first end of the third member communicating with the first end of the fourth member;

e) the first member and the second member with the curved portion at their ends forming a first loop;

f) the third member and the fourth member with the curved portion at their ends forming a second loop;

g) a fifth member having a first end and a second end;

h) a sixth member having a first end and a second end;

i) a seventh member having a first end and a second end;

j) an eighth member having a first end and a second end;

k) a ninth member having a first end and a second end; and

l) a tenth member having a first end and a second end, the first end of the fifth member coupled to the second end of the first member, the second end of the fifth member communicating with the second end of the sixth member, the first end of the sixth member communicating with the first end of the seventh member, the second end of the seventh member communicating with the second end of the eighth member, the first end of the eighth member communicating with the first end of the ninth member, the second end of the ninth member communicating with the second end of the tenth member, and the first end of the of the tenth

member coupled to the second end of the fourth member;

m) the fifth member and the sixth member with the curved portion at their ends forming a third loop;

n) the seventh member and the eighth member with the curved portion at their ends forming a fourth loop; and

o) the ninth member and the tenth member with the curved portion at their ends forming a fifth loop.

30. The stent of claim 29, wherein the first member, the third member, the sixth member, the eighth member, and the tenth member have substantially the same angular orientation to the longitudinal axis of the stent and the second member, the fourth member, the fifth member , the seventh member, and the ninth member have substantially the same angular orientation to the longitudinal axis of the stent.

31. The stent of claim 29, wherein the first, second, third, and fourth members in at least one of the plurality of spaces have a width that is greater than the width of the fifth, sixth, seventh, eighth, ninth, and tenth members in that space.

32. The stent of claim 31, wherein the relative widths of said the fifth, sixth, seventh, eighth, ninth, and tenth members with respect to said first, second, third, and fourth members is such that when said stent is crimped for insertion into a lumen of a blood vessel, the fifth, sixth, seventh, eighth, ninth, and tenth members are crimpable to essentially the same size as said first, second, third, and fourth members.

33. The stent of claim 32, wherein the fifth, sixth, seventh, eighth, ninth, and tenth members provide improved flexibility.

34. The stent of claim 33, wherein, while flexing, the fifth, sixth, seventh, eighth, ninth, and tenth members have lower maximal strain.

35. The stent of claim 34, wherein, said lower maximal strain is below the maximum strain without non-elastic deformation for the material of the stent.

36. The stent of claim 35, wherein, said stent is made of stainless steel and said lower maximal strain is below approximately 0.5%.

37. The stent of claim 29, wherein a substantial portion of each of the members is substantially straight.

38. The stent of claim 29, wherein the members are comprised of metal.

39. The stent of claim 38, wherein the metal is selected from the group consisting of stainless steel and nitinol.

40. The stent of claim 29, wherein the first, second, third, and fourth members and the fifth, sixth, seventh, eighth, ninth, and tenth members are provided with different flexibilities with respect to each other.

41. The stent of claims 40, wherein the fifth, sixth, seventh, eighth, ninth , and tenth members patterns are more flexible than the first, second, third, and fourth members.

42. The stent of claim 40, wherein at least one portion of at least one of the fifth, sixth, seventh, eighth, ninth, and tenth members is provided with at least one portion that is more flexible than at least one portion of at least one of the first, second, third, and fourth members.

43. The stent of claim 29, wherein the first, second, third, and fourth members and the fifth, sixth, seventh, eighth, ninth, and tenth members are provided with different resistances to radial compression with respect to each other.

44. The stent of claim 43, wherein the first, second, third, and fourth members have a greater resistance to radial compression than the fifth, sixth, seventh, eighth, ninth, and tenth members.

45. The stent of claims 43, wherein the fifth, sixth, seventh, eighth, ninth, and tenth members have a greater resistance to radial compression than the first, second, third, and fourth members.

46. The stent of claim 29, wherein at least one portion of at least one of the first, second, third, and fourth members and at least one portion of at least one of the fifth, sixth, seventh, eighth, ninth, and tenth members are provided with different resistances to radial compression with respect to each other.

47. The stent of claim 46, wherein at least one portion of at least one of the plurality of the first, second, third, and fourth members is provided with at least one portion that has a greater resistance to radial compression than at least one portion of at least one of the fifth, sixth, seventh, eighth, ninth, and tenth members.

48. The stent of claim 46, wherein at least one portion of at least one of the fifth, sixth, seventh, eighth, ninth, and tenth members is provided with at least one portion that has a greater resistance to radial compression than at least one portion of at least one of the first, second, third, and fourth members.

49. The stent of claim 1 wherein said stent is self-expanding.

50. The stent of claim1 wherein said stent is balloon expanded.